

PRELIMINARY AMENDMENT

Please amend the Claims as follows:

1. **(Currently Amended)** A method of consolidating a subterranean zone penetrated by a well bore comprising the steps of:
 - (a) introducing a brine preflush containing a ~~C₁₂-C₂₂ alkyl phosphonate~~ cationic surfactant into said subterranean zone around and adjacent to said well bore;
 - (b) introducing a hardenable resin composition into said subterranean zone around and adjacent to said well bore, said hardenable resin composition comprising a furan liquid resin mixture, a solvent, an organosilane coupling agent, and an acid catalyst;
 - (c) introducing a brine overflush containing a ~~C₁₂-C₂₂ alkyl phosphonate~~ cationic surfactant into said subterranean zone to displace the resin composition from the pore space in said subterranean zone; and
 - (d) allowing said hardenable resin composition to consolidate ~~harden and form said subterranean zone around and adjacent to said well bore into a consolidated permeable mass.~~
2. **(Currently Amended)** The method of claim 1 wherein said brine preflush and brine overflush ~~are~~ comprise sodium chloride brines.
3. **(Currently Amended)** The method of claim 2 wherein said sodium chloride is present in said brine preflush and said brine overflush in an amount of about 15% by weight of said brine preflush and overflush.
4. **(Cancelled)**
5. **(Cancelled)**
6. **(Currently Amended)** The method of claim 1 wherein said cationic surfactant is present in said brine preflush and said brine overflush in an amount in the range of from about 0.01% to about 3% by weight of said brine preflush and said brine overflush.
7. **(Currently Amended)** The method of claim 1 wherein said furan liquid resin mixture comprises a 2-furanmethanol homopolymer present in said furan liquid resin mixture in an amount in the range of from about 55% to about 60% by weight thereof and a furfuryl alcohol present in said mixture in an amount in the range of from about 40% to about 45% by weight thereof.

8. **(Original)** The method of claim 1 wherein said furan liquid resin mixture is present in said hardenable resin composition in an amount in the range of from about 20% to about 60% by weight thereof.

9. **(Currently Amended)** The method of claim 1 wherein said solvent ~~is selected from the group consisting of~~ **comprises at least one of the following:** furfuryl acetate, C₁ - C₈ alkyl acetates, 2-butoxy ethanol, diethylene glycol methyl ether, diethylene glycol dimethyl ether, or ~~and~~ dipropylene glycol methyl ether.

10. **(Currently Amended)** The method of claim 1 wherein said solvent ~~is~~ **comprises** furfuryl acetate.

11. **(Original)** The method of claim 1 wherein said solvent is present in said hardenable resin composition in an amount in the range of from about 40% to about 80% by weight thereof.

12. **(Currently Amended)** The method of claim 1 wherein said organosilane coupling agent ~~is selected from the group consisting of~~ **comprises at least one of the following:** N-2-(aminoethyl)-3-aminopropyltrimethoxysilane, 3-glycidoxypropyltrimethoxysilane, or ~~and~~ n-beta-(aminoethyl)-gamma-aminopropyltrimethoxysilane.

13. **(Currently Amended)** The method of claim 1 wherein said organosilane coupling agent ~~is~~ **comprises** N-2-(aminoethyl)-3-aminopropyltrimethoxysilane.

14. **(Original)** The method of claim 1 wherein said organosilane coupling agent is present in said hardenable resin composition in an amount in the range of from about 0.1% to about 2% by weight thereof.

15. **(Currently Amended)** The method of claim 1 wherein said acid catalyst ~~is selected from the group consisting of~~ **comprises at least one of the following:** salicylic acid, ethylenediaminetriacetic acid, benzoic acid, oxalic acid, maleic acid, alkyl benzenesulfonic acids, or ~~and~~ salts thereof.

16. **(Currently Amended)** The method of claim 1 wherein said acid catalyst ~~is~~ **comprises** an alkyl benzenesulfonic acid.

17. **(Original)** The method of claim 1 wherein said acid catalyst is present in said hardenable resin composition in an amount in the range of from about 0.01% to about 10% by weight thereof.

18. **(Original)** The method of claim 1 wherein said brine preflush is introduced into said subterranean zone at a pressure below the fracture pressure of said zone and a rate in the range of from about 0.1 to about 5 barrels per minute until a total volume of at least about 20 gallons of said brine per foot of said well bore interval in said subterranean zone has been introduced.

19. **(Currently Amended)** The method of claim 1 wherein said brine overflush is introduced into said subterranean zone at a pressure below the fracture pressure of said zone and at a rate in the range of from about 0.1 to about 5 barrels per minute until a total volume of about 3 times the volume of said brine preflush has been introduced.

20. **(Currently Amended)** A method of consolidating a subterranean zone penetrated by a well bore comprising the steps of:

(a) introducing a brine preflush containing a ~~C₁₂-C₂₂ alkyl phosphonate~~ cationic surfactant into said subterranean zone around and adjacent to said well bore;

(b) introducing a hardenable resin composition into said subterranean zone around and adjacent to said well bore, said hardenable resin composition comprising a furan liquid resin mixture, a solvent, an organosilane coupling agent, and an acid catalyst;

(c) circulating a clean-up brine ~~containing a C₁₂-C₂₂ alkyl phosphonate surfactant~~ in said well bore penetrating said subterranean zone to remove said hardenable resin composition therefrom without significantly disturbing ~~the~~ said hardenable resin composition in said subterranean zone;

(d) allowing said hardenable resin composition to consolidate to form a consolidated mass ~~harden in said subterranean zone whereby said subterranean zone around and adjacent to said well bore including in the pore spaces thereof is consolidated into a solid impermeable mass~~; and then

(e) fracturing said subterranean zone and placing particulate proppant material therein to provide flow channels through said ~~solid impermeable~~ consolidated mass.

21. **(Currently Amended)** The method of claim 20 wherein said brine preflush and said clean-up brine ~~are~~ comprise sodium chloride brines.

22. **(Original)** The method of claim 21 wherein said sodium chloride is present in said brine preflush and said clean-up brine in an amount of about 15% by weight of said brine preflush and said clean-up brine.

23. (Cancelled)

24. (Cancelled)

25. (Original) The method of claim 20 wherein said cationic surfactant is present in said brine preflush and said clean-up brine in an amount in the range of from about 0.01% to about 3% by weight of said brine preflush and said clean-up brine.

26. (Currently Amended) The method of claim 20 wherein said furan liquid resin mixture comprises a 2-furanmethanol homopolymer present in said furan liquid resin mixture in an amount in the range of from about 55% to about 60% by weight thereof and furfuryl alcohol present in said mixture in an amount in the range of from about 40% to about 45% by weight thereof.

27. (Original) The method of claim 20 wherein said furan liquid resin mixture is present in said hardenable resin composition in an amount in the range of from about 20% to about 60% by weight thereof.

28. (Currently Amended) The method of claim 20 wherein said solvent ~~is selected from the group consisting of~~ **comprises at least one of the following:** furfuryl acetate, C₁ - C₈ alkyl acetates, 2-butoxy ethanol, diethylene glycol methyl ether, diethylene glycol dimethyl ether, ~~and or~~ dipropylene glycol methyl ether.

29. (Currently Amended) The method of claim 20 wherein said solvent ~~is~~ **comprises** furfuryl acetate.

30. (Original) The method of claim 20 wherein said solvent is present in said hardenable resin composition in an amount in the range of from about 40% to about 80% by weight thereof.

31. (Currently Amended) The method of claim 20 wherein said organosilane coupling agent ~~is selected from the group consisting of~~ **comprises at least one of the following:** N-2-(aminoethyl)-3-aminopropyltrimethoxysilane, 3-glycidoxypropyltrimethoxysilane, ~~or and~~ n-beta-(aminoethyl)-gamma-aminopropyltrimethoxysilane.

32. (Currently Amended) The method of claim 20 wherein said organosilane coupling agent ~~is~~ **comprises** N-2-(aminoethyl)-3-aminopropyltrimethoxysilane.

33. **(Original)** The method of claim 20 wherein said organosilane coupling agent is present in said hardenable resin composition in an amount in the range of from about 0.1% to about 2% by weight thereof.

34. **(Currently Amended)** The method of claim 20 wherein said acid catalyst ~~is selected from the group consisting of~~ **comprises at least one of the following:** salicylic acid, ethylenediaminetriacetic acid, benzoic acid, oxalic acid, maleic acid, alkyl benzenesulfonic acids, or ~~and~~ salts thereof.

35. **(Currently Amended)** The method of claim 20 wherein said acid catalyst ~~is~~ **comprises** an alkyl benzenesulfonic acid.

36. **(Original)** The method of claim 20 wherein said acid catalyst is present in said hardenable resin composition in an amount in the range of from about 0.01% to about 10% by weight thereof.

37. **(Original)** The method of claim 20 wherein said brine preflush is introduced into said subterranean zone at a pressure below the fracture pressure of said zone and a rate in the range of from about 0.01 to about 5 barrels per minute until a total volume of at least about 20 gallons of said brine per foot of said subterranean zone has been introduced.

38-49. **(Cancelled)**

50. **(New)** The method of claim 1 wherein said cationic surfactant in said brine preflush and said brine overflush comprises at least one of the following: ethoxylated nonyl phenol phosphate ester, C₁₂ to C₂₂ alkyl phosphonate surfactants, a cationic surfactant, or a non-ionic surfactant.

51. **(New)** The method of claim 1 wherein said cationic surfactant in said brine preflush and said brine overflush comprises a C₁₂ - C₂₂ alkyl phosphonate surfactant.

52. **(New)** The method of claim 20 wherein said cationic surfactant in said brine preflush and said clean-up brine comprises at least one of the following: ethoxylated nonyl phenol phosphate ester, C₁₂ to C₂₂ alkyl phosphonate surfactants, a cationic surfactant, or a non-ionic surfactant.

53. **(New)** The method of claim 20 wherein said cationic surfactant in said brine preflush and said clean-up brine comprises a C₁₂ - C₂₂ alkyl phosphonate surfactant.